

APPENDIX A

CLOSURE ANALYSIS FINANCIAL TOPICS

When Congress passed the Clean Water Act [CWA, 33 U.S.C. §1251 *et seq.*], it directed EPA to require industrial dischargers to meet discharge limits based on “Best Available Technology *Economically Achievable*” (BAT, emphasis added). As EPA designs a set of economic and financial analyses tailored to the industry in a given rulemaking, the Agency incorporates methods and decisions that:

- reflect the current published literature and thinking on finance and economics as tailored to that industry and appropriate for the rulemaking process,
- are consistent with other EPA economic and financial analyses for effluent limitations guidelines (or document recent developments in finance and economics that lead to a change in methodology),
- use multiple approaches to examine different facets of the industry, requiring the design of different tests for different sectors of the regulated community.¹
- examine an industry in the same light in which it presents itself in an EPA questionnaire, industry comments, or as presented in public data.

Chapter 3 of this report describes EPA’s methodology to evaluate economic impacts to regulated facilities. For commercial facilities, the primary method is a closure analysis. This analysis requires the use of a method for calculating earnings. This Appendix discusses how EPA calculates earnings, along with a detailed discussion of other interrelated topics, including unpaid labor and management, sunk costs, capital replacement, depreciation, cash flow, and net income.

A.1 UNPAID LABOR AND MANAGEMENT

EPA received comments regarding the desirability to include proxy costs for unpaid labor and management in the economic analysis. Section A.1.1 begins by reviewing the number of facilities within the scope of the regulation that report unpaid labor and management. Section A.1.2 examines an operation’s financial status prior to and as a result of the rulemaking. Section A.1.3 examines data sources for a set of estimated wages should EPA decide whether to impute this cost to a facility. Section A.1.4 reports the results of the sensitivity analysis, having addressed the question of how the economic impacts change with the imputation of costs for unpaid labor and management.

¹ For example, among commercial and non-commercial operations, or multiple tests within a sector, such as financial health and borrowing/credit capacity tests as well as closure analyses for commercial facilities.

A.1.1 How Many Facilities Within The Scope of the Regulation Report Unpaid Labor and/or Management?²

The population within the scope of the regulation are net pen, flow-through, and recirculating systems that produce at least 100,000 lbs/year. Within the scope of the regulation, EPA's survey reports 2 unweighted facilities, representing 3 weighted facilities nationwide³ that report unpaid labor and/or management. One facility reports only unpaid management while the other reports both unpaid labor and unpaid management. In terms of financial organization, these facilities are a S Corporation/Limited Liability Corporation, and a Sole Proprietorship. Both report annual sales less than \$750,000, i.e., they are small businesses as defined by the Small Business Administration.

A.1.2 Baseline Status of These Facilities

Both facilities pass the baseline discounted cash flow analysis. Neither incur impacts under any of the five options examined for the Notice of Data Availability (USEPA, 2003) or final rule.

A.1.3 Estimated Costs for Sensitivity Analysis

EPA examined several sources for possible wage estimates to use in the sensitivity analysis. These include the Federal Minimum Wage (\$5.15/hr), wage estimates by the Bureau of Labor Statistics (BLS) "Current Population Survey", and the USDA's Economic Research Service (ERS).

BLS' Current Population Survey lists median weekly earnings of full-time wage and salary workers by detailed occupation (BLS, 2004a and 2001, Table 39). For farm workers, median weekly earnings range from \$309 in 2000 to \$318 in 2002 or, roughly, \$16,000 to \$16,500 per year. For farm managers, median weekly earnings range from \$547 in 2000 to \$488 in 2002 or, roughly, \$28,450 to \$25,376 per year.

BLS' Occupational Employment and Wages for category 11-9011 Farm, Ranch, and Other Agricultural Managers in animal production reports an average (not median) annual wage of \$51,370 per year in 2002 (BLS, 2004b).

As part of its Agricultural Resource Management Survey (ARMS), USDA's ERS reports an average farm household income of \$65,757 per year in 2002 for all farms. For commercial farms with more than \$250,000 per year in sales, farming contributes the major part of total estimated farm income at about \$75,000 per year (USDA, 2003).

² No Survey IDentification Numbers (SIDs) or other identifying information are included in order to keep the report non-confidential.

³ If the scope of the final regulation were to include all operations with more than 20,000 lbs/yr, the number of facilities reporting unpaid labor and management increases to 12 unweighted facilities and 44 weighted.

For the purposes of this analysis, EPA examined the effect of including the following labor and management costs:

- lowest of the USDA ARMS estimate for commercial farms, USDA ARMS estimate for all farms, and Bureau of Labor Statistics, Occupational Employment and Wages (\$51,370 per year).
- 2002 Bureau of Labor Statistics, Current Population Statistics, farm manager (\$25,376 per year).
- minimum wage (\$10,712 per year).

These costs were prorated according to the number of hours worked, if the respondent reported less than 40 hours/week.

A.1.4 Results of the Sensitivity Analysis

The closure analysis is based on the discounted cash flow estimate for earnings. The results of this sensitivity analysis indicate the following:

- Under the first assumption (\$51,370 per year), all facilities are baseline closures.
- Under the second assumption (\$25,376 per year), all facilities remain open in the baseline and under all of the options.
- Under the minimum wage assumption (\$10,712 per year), all facilities remain open in the baseline and under all of the options

By setting the scope of the rule to a threshold production of 100,000 lbs/yr, nearly all facilities reporting unpaid labor and management were removed from the scope. Of the three facilities that remain, none show a change in the impacts of the rule when a wage is imputed for unpaid labor and management (i.e., they are open in the baseline and remain open under all options, or they close in the baseline).

There are two issues to consider when applying charges for unpaid labor. First, the Farm Financial Standards Council specifically recommends that a "charge for unpaid family labor and management should not be included on the income statement..." (FFSC, 1997, pp. II-3 and II-22). Second, unpaid family labor is "unpaid" only with respect to the income statement. Distributions from the business to cover family living and other personal expenses are generally referred to as "family living withdrawals" or "owner withdrawals." These withdrawals are shown in the statement of owner equity in the balance sheet and not the income statement.

EPA therefore does not impute a charge for unpaid labor and management when calculating farm income as cash flow or net income for the closure analysis. For the farm financial health analysis, withdrawals for family labor and management are reflected in the balance sheet information incorporated in the calculations.

A.2 SUNK COSTS

EPA received comments stating that the analysis should consider sunk costs. Comments characterized cash flow analysis as being inappropriate because it does not account for sunk costs, particularly in older facilities. Sunk costs paid out of capital (i.e., not financed) have already occurred and, as a consequence, are not incremental cash flows and should not affect future investment or the economic viability of the firm. EPA thus excludes this category of sunk costs from the closure analysis. In doing so, EPA follows standard financial textbook methodology (e.g., Brigham and Gapenski, 1997, p. 431). The Farm Financial Standards Council (FFSC, 1997) makes no mention of sunk costs.

If not expensed and financed by debt, sunk costs appear as interest and principle payments in the income statement and balance sheet. The current portion of financed sunk costs is reflected in the income statement and, thus, is included in the estimate of cash flow. The principle payment is a shift from the liabilities side to the asset side of the balance sheet. EPA considers sunk costs as reflected in a farm's debt/asset ratio and, as such, will be considered in EPA's evaluation of farm financial health and the ability of facilities (or companies) to carry additional debt (Section 3.2.4). In other words, EPA considers sunk costs as part of its economic and financial analysis.

For comparison, Engle et al. (2004) examines the potential impact of added costs on flow-through trout systems. Presumably the authors include sunk costs in their enterprise budget analysis by the inclusion of depreciation as a cost. Depreciation (as calculated for tax purposes), however, can overstate the replacement cost particularly in the initial years of an accelerated cost recovery schedule (see Section A.4). Another facet of their analysis—the mixed integer programming analysis—excludes fixed costs as well as sunk costs.

A.3 CAPITAL REPLACEMENT

EPA received comments that the facility financial analysis should include an allowance for capital replacement. EPA considered the need to include capital replacement costs in its analysis. Under the “no growth” assumption for the economic analysis, capital expenditures for growth are excluded. That is, if EPA were to include consider capital expenditures, it would be for existing assets. These expenditures fall into two categories:

- costs incurred within the useful life of the asset to keep it operating efficiently.
- costs to replace the asset when it has reached the end of its useful life.

These costs are examined in Sections A.3.1 and A.3.2, respectively.

A.3.1 Expenditures During the Useful Life of the Asset

IRS considers expenses that keep property in efficient operating condition and do not prolong the useful life or increase the capacity (i.e., add to its value as an asset) are generally deductible as repairs (CCH, 1999, p. 262, Section 903), i.e., the maintenance part of operating and maintenance costs.

This interpretation is consistent with IRS guidance to farmers and sole proprietors. For example, regarding “Instructions for Schedule F, Profit or Loss from Farming” on “Repairs and Maintenance”:

You can deduct most expenses for the repair and maintenance of your farm property. Common items of repair and maintenance are repainting, replacing shingles and supports on farm buildings, and minor overhauls of trucks, tractors and other farm machinery. *However, repairs to, or overhauls of, depreciable property that substantially prolong the life of the property, increase its value, or adapt it to a different use are capital expenditures.* (emphasis added) For example, if you repair the barn roof, the cost is deductible. But if you replace the roof, it is a capital expense.” (IRS, 2000, p. 25)

Regarding “Instructions for Schedule C, Profit or Loss from Business” on Line 21:

Deduct the cost of repairs and maintenance. Include labor, supplies, and other items that do not add to the value or increase the life of the property . . . Do not deduct amounts spent to restore or replace property; they must be capitalized.” (IRS, 2001, p. C-4)

Capital replenishment costs within the useful life of the equipment are part of the O&M costs to keep the equipment running efficiently throughout its useful life. These costs are included in EPA’s estimated compliance costs for the 10-year period. These expenses would be reported as part of Question C6 in the detailed questionnaire, as part of total expenses and, if reported as a separate cost element, as item C6.1 (repairs and maintenance). Hence, EPA believes that no adjustment is needed for this component

A.3.2 Expenditures at the End of an Asset’s Useful Life

The remaining scenario to examine is what happens when a major asset⁴ has reached the end of its useful life. IRS states that an expense that adds to the value or useful life of property is a capital expense (RIA, 1999, §1.263(a)-1). If a major piece of equipment becomes worn down, the company would perform a discounted cash flow or other analysis to evaluate whether it makes sense to make the new investment. In that case, it is likely that a company would take the opportunity to invest in a more efficient or larger capacity item. An argument, however, could still be made that some portion of the new asset is for replacement while the remainder is for growth. The asset, however, cannot physically be apportioned and a company either installs it or not. If the asset has reached the end of its useful life, that asset plays no role in the analyses to evaluate the investment in a new asset. If the new asset is not purchased, production and revenues are zero because no production can occur without the purchase. Thus, the incremental basis for evaluating the investment is all production and all revenues, even though part of the new investment is to replace exhausted existing capacity.

Assuming the investment is made, the new costs could be financed from working capital or through debt. Each method would appear on the financial statement in a different place. If the investment is made from working capital, the asset represents a shift from current assets (cash) to fixed

⁴ If the asset isn’t major, its purchase would have no material impact in the income statement and therefore need not be considered in this discussion.

assets, i.e., no change to total assets. No adjustment is necessary to EPA's methodology if the investment is made through working capital.⁵

If the investment is financed through debt, the cost includes interest and principal. EPA's economic analyses use net income plus depreciation as the basis for cash flow with interest payments included as an expense (if interest is passed back to the facility). The current liabilities entry on the balance sheet contains the current portion of long-term debt, i.e., the principal payment due at that time. But the "no growth" assumption also implies no change in working capital. In effect, the company stops paying principal on the exhausted asset and begins paying principal on the new asset.⁶ Hence, no adjustments is needed to EPA's methodology if the investment is funded through debt.

A.3.3 EPA's Consideration of Capital Replacement in the Financial and Economic Analysis

First, EPA evaluated data on capital expenditures and capital replacement. The Census Bureau collects data on annual capital expenditures including forestry, fishing, and agricultural services (Census, 2004). However, Census' capital expenditure data include intra-company transfers of capital equipment and ownership changes (Census, 2004, Appendix D-10, Instructions, Definitions, and Codes List). As a consequence, it is difficult to know whether capital expenditures help maintain existing production or whether they support expanded production. Capital expenditures for an industry undergoing consolidation, such as salmon, include acquisitions reflecting transfers of capital rather than purchases of new or replacement capital. Further, the Census data includes expansion in productive capacity, whether in new plants or in existing plants. Aggregate industry data on capital expenditures cannot be used to specify the level of capital expenditure that is necessary to maintain productive capacity at an individual facility.

Second, EPA evaluated whether depreciation represented an approximate proxy for capital replacement costs. This is discussed in Section A.4.

Third, EPA included costs for capital replacement as they occur within interest payments reported on income statement. Capital replacement costs that are capitalized and not expensed are reflected in the asset, debt, and equity components of the balance sheet as appropriate. Past capital replacement costs are represented in EPA's analysis in its consideration of farm financial health measures and credit tests that are based on balance sheet data.

Finally, when estimating compliance costs, EPA includes replacement costs for pollution control capital. EPA's cost estimates include all capital expenditures (whether initial or replacement) and O&M costs that are projected to occur within the 10-year analytical time frame.

⁵ EPA presumes that the company included its opportunity cost of capital in the analysis to determine whether and, if so, how to fund the investment. EPA's cost annualization model includes cost of capital as an input regardless of the financial source (e.g., opportunity, debt, equity, or a mix). See Section 3.1 of this report.

⁶ If the argument is made that the loan period is shorter than the useful life of the asset, the company has the benefit of using the asset when it paid off. No allowance for this benefit is made in EPA methodology.

A.4 DEPRECIATION

Depreciation is an annual allowance for the exhaustion, wear, and tear of a firm's fixed assets. Depreciation reflects expenses incurred in a prior year (i.e., sunk costs) and does not absorb incoming revenues in the current period. Depreciation may be considered as recouping part of an expense made in a previous period (i.e., looking backward to the original purchase) or as saving toward replacement of that asset (i.e., looking forward to the replacement purchase). The second approach assumes that the annual operation and maintenance charge is not sufficient to ensure a facility's efficiency and capacity in the long run. Over the long term, ongoing reinvestment in plant and equipment is necessary.

EPA examined the relationship between depreciation as a concept and depreciation as recorded for tax purposes to evaluate whether depreciation could serve as a proxy for capital replacement. Although depreciation is supposed to reflect wear and tear over the useful life of an asset, it does not necessarily do so for tax purposes. There are several reasons why depreciation for tax purposes might bear no relationship to capital replenishment costs. First, rather than depreciating an asset over its useful life, it is depreciated over the shorter class life. For example, municipal wastewater treatment plants have a class life or useful life of 20 years or more but less than 25 years. Its recovery period for depreciation is 15 years (CCH 1999, Section 1240). There is a five-year period at the end where the company has recovered the value of the asset but does not have to replace it.

Second, a company may use the Modified Accelerated Cost Recovery System (MACRS) rather than straight-line depreciation for additional tax benefit. MACRS provides substantial tax benefits by allowing larger reductions in taxable income in the years immediately following an investment when the time value of money is greater. In our example of the 20-year wastewater treatment plant, a depreciable fraction over its useful life would be $1/20$ or 0.05 (full year convention). Under MACRS, however, that fraction would be 0.10 for the first year. The effect becomes more pronounced with shorter recovery periods. The effect of different depreciation methods on earnings and the overstatement of the true economic cost of depreciation (as noted in FFSC, 1997, p. II-30). Rappaport (1998, p.14) notes that the choice of an accounting method is a management choice that can materially impact earnings but does not change a company's cash flows. Damodaran (2001, Chapter 3, p. 6) notes that many companies legally keep two sets of books, one recording straight line depreciation for financial reporting and the other recording accelerated depreciation for tax purposes.

Third, in the scenario of a new or heavily upgraded site, the depreciation is highest when there is the least need for capital replenishment. With accelerated depreciation, the write-offs are highest during the first few years of operation when there is little need to replenish equipment. Fourth, the original cost of an asset might bear little resemblance to the replacement cost for the asset.

In theory, the economic description of depreciation as a means of prorating a capital cost over all the units it produces during its useful life is a cost that is part of the "cost of production." In practice, EPA found that depreciation as recorded for tax purposes could substantially overestimate the replacement cost for capital investments and was thus not appropriate to include as a cost in the earnings estimates. The exclusion of depreciation as a cost is consistent with economic theory that a facility will continue operation as long as price exceeds its variable costs. Depreciation is a bookkeeping charge reflecting previous capital expenditures and thus is a sunk cost which should be ignored in the closure analysis.

A.5 CASH FLOW

EPA's closure analysis is a discounted cash flow analysis (DCF). DCF methods are used in valuing companies (e.g., to decide whether to invest in a business) and projects (e.g., capital budgeting). EPA uses DCF to value a facility prior the incurrence of any additional pollution control costs. EPA then values the facility after the inclusion of these costs and compares the results. EPA's focus is on the change created by the incremental pollution control costs rather than the baseline value itself.

EPA examined several textbooks and references to identify the most appropriate basis for evaluating earnings as part of its closure methodology. Table A-1 summarizes several academic opinions on cash flow versus accounting profits as a measure on which to base the evaluation of a project or firm. There is a consensus that cash flow is the appropriate measure for the analysis. EPA's methodology, then, is consistent with those in current academic literature.

Table A-1
Cash Flow Versus Accounting Income

Source	Comment
FFSC, 1997, p. II-15	"...The most common valuation methods are: ... <i>Discounted Cash Flow Methods</i> . For an asset: the present value of future cash inflows into which an asset is expected to be converted in the due course of business, less present values of cash outflows necessary to obtain those inflows."
Brealy and Myers, 1996, pp. 113-114	Chapter Heading: Making Investment Decisions with the Net Present Value Rule. "...you should always stick to three general rules: 1. Only cash flow is relevant. 2. Always estimate cash flows on an incremental basis. 3. Be consistent in your treatment of inflation.
p.114-116	The first and most important point is that the net present value rule is stated in terms of cash flows. Cash flow is the simplest possible concept; it is just the difference between dollars received and dollars paid out. Many people nevertheless confuse cash flow with accounting profits." The authors identify depreciation as a non-cash-flow item. Specifies that sunk costs should be excluded, whereas working capital requirements, opportunity costs, and incidental effects should be included in the analysis. Brealy and Myers warn analysts to be cautious when deciding whether and, if so, how to include allocated overhead costs in the analysis.
Brigham and Gapenski, 1997 p. 429-431.	"CASH FLOW VERSUS ACCOUNTING INCOME Income statements in some respect mix apples and oranges...In capital budgeting, it is critical that we base decisions strictly on cash flows, or actual dollars that flow into and out of the company..." Incremental cash flow is identified as the appropriate basis for capital budgeting purposes. Sunk costs are not included but opportunity costs, capital outlays, effects on other projects, changes in net working capital are included.

Source	Comment
Damodaran, 2001a	Chapter 9: Measuring Earnings. “...the accounting earnings for many firms bear little or no resemblance to the true earnings of the firm.” Chapter 9 outlines techniques to get from accounting statements to a measure of earnings while Chapter 10 traces the path from earnings to cash flow. Cash flow is the basis on which the value of an asset/project/firm is calculated.
Damodaran, 2001b	Professor Damodaran’s web site materials are succinct: returns on projects should be measured based on cash flows. To get from accounting earnings to cash flow, you add back non-cash expenses like depreciation, subtract out cash outflows which are not expensed (like capital expenditures), and incorporate changes in working capital.
Jarnagin, 1996.	Financial Accounting Standards Board, SFAS Nos. 105, 107, and 119 state that one of the preferred methods for calculating fair value is the present value of future cash flows. The present value of future net income is not listed among the preferred methods.
McKinsey & Company, Inc., et alia, 2000	“First, empirical research suggests that cash flow, not accounting earnings, is what drives share price performance.” p. 55 The authors’ opinion is reflected in their title for Chapter 5: Cash is King.
Rappaport, 1998 pp.13-31.	Chapter 2: Shortcomings of Accounting Numbers “Remember, cash is a fact, profit is an opinion.” (p. 15) Cash flow, not earnings or net income, is appropriate basis for valuation.

Some authors use the term “free cash flow” is used to describe the after-tax cash flow that would be available to both creditors and shareholders if the company had no debt (McKinsey & Company, Inc., 2000; Brealy and Myers, 1996; Brigham and Gapenski, 1997), although there is no consensus on how to calculate it. In general, most approaches calculate free cash flow from net income with the following components:

$$\begin{array}{llll}
 \text{Free cash flow} & = & \text{net income} & \\
 & & \textit{plus} & \text{non-cash expenses (e.g., depreciation)} \\
 & & \textit{minus} & \text{cash outflows that are not expensed (e.g., capital expenditures)} \\
 & & \textit{plus/minus} & \text{changes in working capital (to change accrual revenues and expenses into cash revenues and expenses)}
 \end{array}$$

(See Damodaran, 2001b, slides 158 and 171; Brealy and Myers, 1996, p. 121; and Rappaport, 1998, pp. 15-18). The differences among the authors lie in the level of detail pursued when making estimates of free cash flow. Some of the factors listed in the literature include adjustments for:

- non-operating income and expenses (e.g., cash flows from discontinued operations, extraordinary gains or losses, or cash flows from investments in unrelated subsidiaries);
- lease expenses;
- R&D expenses (which Damodaran, 2001a, argues should be capitalized);

- increase in assets, net of liabilities;
- investment in goodwill (expenditures to acquire other companies in excess of book value of net assets).

“Free cash flow” might be a closer estimate to what EPA would want to examine in the closure analysis but some factors render it inappropriate for implementation. EPA takes the position that it examines a firm or facility on the basis on which it has chosen to present itself. The potentially substantial adjustments needed to estimate free cash flow from financial statements means EPA would have to justify changes in accounting practices from those used by the company. Second, in order to be consistent with its “no growth” assumption (to avoid a facility “growing” out of impacts from incremental pollution control costs), EPA would have to be able to disaggregate capital expenditures to isolate those used for existing assets from those for new capacity, mergers, or acquisitions. As mentioned in Section A.3.3, EPA’s analysis addresses capital replacement considerations.

A.6 NET INCOME

EPA received comments that depreciation is a cost that should be included in the earnings estimate, that is, the basis for earnings should be net income rather than cash flow.⁷ The Financial Accounting Standards Board launched a “financial performance reporting” project in 2001 (FASB, 2004). Its summary of user interviews contains two items relative to this discussion:

- “Net income is an important measure that is often used as a starting point for analysis but generally not the most important measure used in assessing the performance of an enterprise...”
- “Key financial measures include the following, which are not necessarily well-defined terms or notions: (a) ‘operating’ free cash flow or free cash flow, (b) return on invested capital, and (c) ‘adjusted,’ ‘normalized,’ or ‘operating’ earnings.

Net income, then, is not considered a key financial measure by the user community.

Part of the discussion on whether net income or cash flow should be used as earnings in the closure analysis hinges on whether the analyst evaluates returns to the firm or returns to the stockholder. As Darmodaran (2001a, Chapter 9) and Brealy and Myers (1996, pp. 766-768) note, returns to the firm begin with after-tax operating earnings while returns to stockholders begin with net income. Closure is the most serious impact that can occur at the facility level and EPA therefore considers the more conservative approach of evaluating the impacts of incremental pollution control costs as evaluating the change in returns to the firm.

Net income considers depreciation a cost but it is a non-cash cost. A company is not obliged to set aside or save the value of depreciation for capital replenishment. A company has the option of dispersing the cash represented by depreciation as it sees fit, including dispersing it as dividends to

⁷ Section A.4 reviews the difference between the economic definition of depreciation and depreciation as calculated for tax and reporting purposes. Section A.3 reviews how EPA addresses capital replacement costs in its economic analysis.

stockholders. The ability of a company to distribute the cash represented by depreciation is what makes depreciation appropriate to consider as earnings. If a company chooses not to save towards reinvestment, that is not an impact of the rule. Site visits and survey financial data indicate that some facilities are run until worn out and the companies have not set aside the value of accumulated depreciation for replacing the equipment. Furthermore, all other things being equal, when it is time to reinvest and the firm has not set aside for that investment, the firm is in no worse shape that it was when it made the initial investment.

EPA evaluated the effects of changing from a cash flow basis to a net income basis. First, the change results in a smaller number of facilities that can be analyzed for impacts. Marginal firms who are “living off their depreciation” and remain open under the baseline cash flow analysis become baseline closures under the net income assumption. These marginal firms have the potential to be removed from the population on which EPA can evaluate impacts of incremental costs. In EPA’s economic analysis for the industry, two additional facilities were projected to close as a result of the rule when net income was used as the basis for earning.

Second, neither the costs nor the removals for baseline closures are included in the analysis. This implies that the use of net income as earnings could underestimate the cost of the rule.

To avoid removing marginal facilities from the impact analysis and underestimating the cost of the rule, EPA’s closure analysis uses a cash flow basis.

A.7 REFERENCES

- BLS (U.S. Department of Labor. Bureau of Labor Statistics). 2004a. Current Population Survey. Table 39 Median Weekly Earnings of Full-time Wage and Salary Workers by Detailed Occupation. <<http://Stats.bls.gov/cps/cpsaat39.pdf>> downloaded 26 January.
- BLS (U.S. Department of Labor. Bureau of Labor Statistics). 2004b. Occupational Employment and Wages. 2002 data. Category 11-9011 Farm, Ranch, and Other Agricultural Managers. <http://www.bls.gov/oes/2002/oes119011.htm>. downloaded 26 January.
- BLS (U.S. Department of Labor. Bureau of Labor Statistics). 2001. Current Population Survey. Table 39 Median Weekly Earnings of Full-time Wage and Salary Workers by Detailed Occupation. <<http://Stats.bls.gov/cps/cpsaat39.pdf>> downloaded 12 April 2001.
- R.A. Brealy and S.C. Myers. 1996. *Principles of Corporate Finance*. 5th edition. The McGraw-Hill Companies, Inc. New York.
- Brigham, E.F., and L.C. Gapenski. 1997. *Financial Management: Theory and Practice*. 8th edition. The Dryden Press. Fort Worth, Texas.
- CCH (CCH, Incorporated). 1999. *2000 U.S. Master Tax Guide*. Chicago, Illinois.
- Census (U.S. Census Bureau). 2004. *Annual Capital Expenditures: 2002*. Washington, DC. ACE/02. Issued January 2004.

- Damodaran, Aswath. 2001a. *Investment Valuation*. 2nd edition. John Wiley & Sons. New York. December publication date. Manuscript available at http://www.stern.nyu.edu/~adamodar/New_Home_Page/valn2ed/book.htm 12 December.
- Damodaran, Aswath. 2001b. 2001b. *Applied Corporate Finance*. Overheads for Measuring Investment Returns and Valuation. http://www.stern.nyu.edu/~adamodar/New_Home_Page/AppldCF and <http://www.stern.nyu.edu/~adamodar/pdfiles/ovhds/val.pdf> > downloaded 11 December 2001.
- Engle, C.R., Steve Pomerleau, Fary Fornshell, Jeffery M. Hinshaw, Debra Sloan, and Skip Thompson. 2004. The Economic Impact of Proposed Effluent Treatment Options for Production of Trout *Onchorhynchus mykiss* in Flow-through Tanks. Submitted to USDA. March draft.
- FASB (Financial Accounting Standards Board). 2004. Project Updates: Financial Performance Reporting by Business Enterprises. Last Updated: March 22, 2004. http://www.fasb.org/project/fin_reporting.shtml > downloaded 22 March.
- FFSC (Farm Financial Standards Council). 1997. *Financial Standards for Agricultural Producers*. December.
- IRS (Internal Revenue Service). 2001. *2001 Instructions for Schedule C, Profit or Loss from Business*. Washington, D.C.
- IRS (Internal Revenue Service). 2000. *Farmer's Tax Guide: for use in preparing 1999 returns*. Publication 225. Washington, D.C.
- Jarnagin, Bill D. 1996 *Financial Accounting Standards: Explanation and Analysis*. 18th edition. CCH, Incorporated. Chicago, IL.
- McKinsey & Company, Inc.. 2000. *Valuation: Measuring and Managing the Value of Companies*. , Tom Copeland, Tim Koller, and Jack Murrin. 3rd edition. John Wiley & Sons, Inc. New York.
- Rappaport, Alfred. 1998. *Creating Shareholder Value: A guide for managers and investors*. The Free Press. Simon & Schuster, Inc. New York.
- RIA (Research Institute of America). 1999. *The Complete Internal Revenue Code*. New York.
- USDA (U.S. Department of Agriculture). 2003. *Agricultural Income and Finance Outlook*. AIS-81. Economic Research Service. November 5.
- USEPA (U.S. Environmental Protection Agency). 2003. Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category; Notice of Data Availability; Proposed Rule. 40 CFR Part 451. *Federal Register* 68:75068-75105. December 29.